

## CA-NV AWWA Water Loss Technical Assistance Program Wave 4 Water Audit Level 1 Validation Document

### Audit Information:

Utility: Pismo Beach      PWS ID: 4010008  
System Type: Potable      Audit Period: Calendar 2016  
Utility Representation: Brandon Shea (Lead Operator), Chad Stoehr (Engineering), Jacque Risenhoover (Finance), Russ Flemming (Utilities Supervisor)  
Validation Date: 7/7/2017      Call Time: 12:00pm      Sufficient Supporting Documents Provided: Yes

### Validation Findings & Confirmation Statement:

#### Key Audit Metrics:

Data Validity Score: 49    Data Validity Band (Level): Band II (26-50)  
ILI: 0.13      Real Loss: 1.97 (gal/conn/day)      Apparent Loss: 4.45 (gal/conn/day)  
Non-revenue water as percent of cost of operating system: 1.6

#### Certification Statement by Validator:

This water loss audit report has been Level 1 validated per the requirements of California Code of Regulations Title 23, Division 2, Chapter 7 and the California Water Code Section 10608.34.

All recommendations on volume derivation and Data Validity Grades were incorporated into the water audit. ☒

### Validator Information:

Water Audit Validator: Drew Blackwell / Larry Lewison (support)    Validator Qualifications: Contractor for CA-NV AWWA Water Loss TAP

Validator Provided



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association

Click to access definition  
 Click to add a comment

Water Audit Report for: **City of Pismo Beach**Reporting Year: **2016** **1/2016 - 12/2016**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

**All volumes to be entered as: ACRE-FEET PER YEAR**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

**WATER SUPPLIED**

Volume from own sources: 3 275.740 acre-ft/yr  
Water imported: 3 1,370.550 acre-ft/yr  
Water exported: n/a 0.000 acre-ft/yr

**Master Meter and Supply Error Adjustments**

Pcnt: 3 Value: 1 acre-ft/yr  
 1 acre-ft/yr  
 1 acre-ft/yr

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

**WATER SUPPLIED:** **1,646.290** acre-ft/yr**AUTHORIZED CONSUMPTION**

Billed metered: 6 1,607.030 acre-ft/yr  
Billed unmetered: n/a 0.000 acre-ft/yr  
Unbilled metered: n/a 0.000 acre-ft/yr  
Unbilled unmetered: 5 **4.116** acre-ft/yr

Click here: for help using option

Pcnt: 1 Value: 4.116 acre-ft/yr

Use buttons to select percentage of water supplied  
OR  
value

**AUTHORIZED CONSUMPTION:** **1,611.146** acre-ft/yr**WATER LOSSES (Water Supplied - Authorized Consumption)** **35.144** acre-ft/yr**Apparent Losses**

Unauthorized consumption: 5 **4.116** acre-ft/yr  
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: 3 16.233 acre-ft/yr  
Systematic data handling errors: 5 4.018 acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:** **24.366** acre-ft/yr**Real Losses (Current Annual Real Losses or CARL)****Real Losses = Water Losses - Apparent Losses:** **10.778** acre-ft/yr**WATER LOSSES:** **35.144** acre-ft/yr**NON-REVENUE WATER****NON-REVENUE WATER:** **39.260** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains: 8 50.0 miles  
Number of active AND inactive service connections: 8 4,889  
Service connection density: 98 conn./mile main

Are customer meters typically located at the curbside or property line? Yes

Average length of customer service line: 10 (length of service line, beyond the property boundary, that is the responsibility of the utility)  
Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 9 72.9 psi

**COST DATA**

Total annual cost of operating water system: 10 \$3,699,264 \$/Year  
Customer retail unit cost (applied to Apparent Losses): 5 \$3.82 \$/100 cubic feet (ccf)  
Variable production cost (applied to Real Losses): 5 \$1,141.90 \$/acre-ft ☐ Use Customer Retail Unit Cost to value real losses

**WATER AUDIT DATA VALIDITY SCORE:****\*\*\* YOUR SCORE IS: 49 out of 100 \*\*\***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

**1: Water imported****2: Customer metering inaccuracies****3: Billed metered**



## CA-NV AWWA Water Loss Technical Assistance Program Wave 4 Water Audit Level 1 Validation Document

Water System Name: **Pismo Beach city of**

Water System ID Number: **4010008**

Water Audit Period: **Calendar 2016**

### Water Audit & Water Loss Improvement Steps:

Steps taken in preceding year to increase data validity, reduce real loss and apparent loss as informed by the annual validated water audit:

- Improved understanding of Supply Meter (Own or Import) Master Meter Error: consider adopting or increasing the rigor of a source meter volumetric testing and calibration program, informed by the guidance provided in AWWA Manual M36 – Appendix A.
- Improved estimation of CMI: consider a customer meter testing program which tests a sample of random meters whose stratification (by size, age, or other characteristics) represents the entire customer meter stock.
- Temporal alignment of Billed Metered Authorized Consumption with Water Supplied: consider pro-rating the first and last months of the audit period to better align consumption with actual dates of use, and using read date as basis for reporting

### Certification Statement by Utility Executive:

This water loss audit report meets the requirements of California Code of Regulations Title 23, Division 2, Chapter 7 and the California Water Code Section 10608.34 and has been prepared in accordance with the method adopted by the American Water Works Association, as contained in their manual, *Water Audits and Loss Control Programs, Manual M36, Fourth Edition* and in the Free Water Audit Software version 5.

Ben Fine

Director of Public Works

[Signature]

10/31/17

Executive Name (Print)

Executive Position

Signature

Date

Utility Provided